

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

In the Matter of	)	
	)	
A National Broadband Plan for Our	)	GN Docket No. 09-51
Future	)	
	)	

To: The Commission

**REPLY COMMENTS OF PACIFICORP AND MIDAMERICAN ENERGY COMPANY**

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## **EXECUTIVE SUMMARY**

Although PacifiCorp and MidAmerican Energy Company (MEC) support the wider availability of broadband services, the Commission should balance these goals with other national priorities related to the reliable and secure operation of the nation's critical infrastructure. Both the federal government and the state governments have made energy independence, reliability and efficiency of paramount importance to the security and economic well-being of our nation. Broadband policy can and should complement these other national policy goals. Thus, when viewed holistically and in the context of other strong federal mandates, the Commission's national broadband plan must include consideration of the needs of electric utilities to not only maintain the existing spectrum resources they are using now, but to also consider how sufficient additional spectrum can be dedicated to utility use for their critical internal communications operations.

Utilities and other critical infrastructure industry (CII) entities rely heavily on wireless communications, yet are experiencing severe spectrum constraints that present significant obstacles to their ability to maintain even the most basic communications services necessary for their operations. The spectrum bands currently relied on for utility operations are already congested and scarce. Moreover, none of these allocations provide adequate bandwidth or channel sizes for the broadband applications that utilities require to support their critical operations – and these channels are in fact being narrowed even further.

PacifiCorp and MEC have each been engaged in extensive and costly multi-year efforts to acquire sufficient spectrum to allow them to meet the Commission's Part 90 narrowbanding mandate while retaining a sufficient level of spectrum exclusivity to allow the deployment of advanced technologies that cannot be supported on shared Part 90 channels. However, there are

few options available to utilities to secure dedicated spectrum for the wide area coverage they need. Commercial services are not a viable option for utility communications needs, since commercial networks are generally not designed or built to provide the levels of reliability and coverage that are necessary to meet utility communications needs, particularly during times of emergency. Utilities also generally cannot compete in spectrum auctions for necessary spectrum. Moreover, the geographic areas covered by licenses at auction seldom, if ever, correspond with a utility's service area, thus forcing a utility to either overpay for more spectrum than it needs or to risk acquiring too little spectrum and being left with coverage gaps.

PacifiCorp and MEC are deeply concerned that the pressures now mounting to identify and reallocate additional spectrum for commercial wireless broadband services will result in an even further diminution and degradation in the amount and quality of dedicated spectrum available to utilities. For too long, utilities have “fallen through the cracks” between public safety services, which have access to ample amounts of high-quality exclusive-use spectrum, and commercial services, which have also been given access to large amounts of bandwidth on which to develop revenue-producing systems.

Despite the pressing need for sufficient spectrum to support the safe, reliable, and efficient provision of critical energy and utility services – which Congress and the Administration have repeatedly declared to be an important and vital national interest – there has been no allocation of non-public safety spectrum for *any* private wireless services in nearly 25 years, and the amount of dedicated spectrum available for utility use has actually *declined* over the past decade as the Commission has opened up and/or reallocated various bands to commercial and non-CII users.

Therefore, the Commission should consider as part of this proceeding a plan that not only maintains existing utility spectrum, but which also makes additional spectrum available to utilities and other CII users. In so doing, the Commission would satisfy Congress' requirement that the national broadband plan include plans to advance policy goals such as energy independence and efficiency, public safety and homeland security, and overall consumer welfare.

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PacifiCorp and MidAmerican Energy Company (“MEC”), wholly-owned subsidiaries of MidAmerican Energy Holdings Company, hereby submit their reply comments in response to the Federal Communications Commission’s *Notice of Inquiry* on the development of a national broadband plan for our country.<sup>1</sup>

PacifiCorp provides electric service to approximately 1.6 million retail customers in service territories covering about 136,000 square miles in portions of six western states: Utah, Oregon, Wyoming, Washington, Idaho, and California. The combined service territory’s diverse regional economy ranges from rural agricultural and mining areas to urbanized manufacturing and government service centers. PacifiCorp has more than 8,300 megawatts of generation capacity from coal, hydro, renewable wind power, gas-fired combustion turbines, and

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<sup>1</sup> / *A National Broadband Plan for Our Future*, GN Docket No. 09-51, Notice of Inquiry, FCC 09-31 (rel. April 8, 2009) (“*NOI*”). On June 25, 2009, the Commission extended the deadline for filing reply comments in this proceeding until July 21, 2009. *A National Broadband Plan for Our Future*, GN Docket No. 09-51, Order, DA 09-1420 (rel. June 25, 2009).

geothermal, and delivers electricity through approximately 57,000 miles of distribution lines and 15,000 miles of transmission lines. PacifiCorp operates the largest non-governmental bulk power system west of the Mississippi River. PacifiCorp operates as Pacific Power in Oregon, Washington, and California, and as Rocky Mountain Power in Utah, Idaho, and Wyoming.

MEC is a combination electric-gas utility operating in Iowa, Illinois, South Dakota, and Nebraska. MEC provides retail electric service to approximately 723,000 customers and retail natural gas service to approximately 702,000 customers in a 10,600 square mile area. By the end of 2009, MEC will have approximately 7,200 megawatts of generating capability from coal, natural gas, oil, hydro, biomass, and renewable wind power.

#### **I. BROADBAND POLICY MUST COMPLEMENT OTHER NATIONAL POLICIES ON ENERGY INDEPENDENCE AND RELIABILITY**

Although PacifiCorp and MEC support the wider availability of broadband services, the Commission should balance these goals with other national priorities related to the reliable and secure operation of the nation's critical infrastructure. Both the federal government and the state governments have made energy independence, reliability and efficiency of paramount importance to the security and economic well-being of our nation. Broadband policy can and should complement these other national policy goals. On the other hand, the promotion of broadband in isolation, and without adequate consideration of these other national policy goals, could result in rules and policies that would serve as major impediments to utilities' ability to carry out these mandates.

Congress emphasized in Section 6001 of the American Recovery and Reinvestment Act<sup>2</sup> that the FCC's national broadband plan should be developed as one component of an expansive

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<sup>2</sup> / American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) ("Recovery Act") § 6001(k)(2)(D).

effort to promote a number of policy objective across a number of sectors, including energy. This mandate builds on, and must therefore support, the national policies underlying the Energy Policy Act of 2005,<sup>3</sup> the Energy Independence and Security Act of 2007,<sup>4</sup> and the energy provisions of the Recovery Act. For example, the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC) have adopted mandatory standards on electric system reliability and on the protection of critical electric infrastructure, including the use of reliable communications for the control and management of the interconnected electric power grid. Similarly, Congress has authorized funding to promote the development of “Smart Grid” programs in an effort to improve the reliability and efficiency of electric transmission and distribution. More recently, the American Clean Energy and Security Act of 2009 (H.R. 2454), as passed by the House of Representatives, includes provisions intended to expand Smart Grid infrastructure and technologies. The Recovery Act itself directs the Commission to address in the national broadband plan how broadband infrastructure and services can be used to advance public policy goals such as energy independence and efficiency.<sup>5</sup>

When viewed holistically and in the context of these strong federal mandates for the efficient and reliable delivery of energy, the Commission’s national broadband plan must include consideration of the needs of electric utilities to not only maintain the existing spectrum resources they are using now, but to also consider how sufficient additional spectrum can be dedicated to utility use for their critical internal communications operations. Utilities’

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<sup>3</sup> / Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 594 (2005).

<sup>4</sup> / Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492 (2007).

<sup>5</sup> / See Recovery Act § 6001(k)(2)(D).

dependence on spectrum resources was recognized in a recent report of the Congressional Research Service on broadband spectrum policy:

Ideally, spectrum policy should be synchronized with broadband policy. The effort to move to energy efficiency is an example of how spectrum policy can affect other policy goals...[A]n efficient Smart Grid requires spectrum capacity to support the broadband communications infrastructure required to operate the grid. A Smart Grid policy that presumes the availability of suitable spectrum for wireless connections could fall short of its intended goal unless spectrum policy is aligned.<sup>6</sup>

As explained more fully herein, PacifiCorp and MEC urge the Commission to not only protect the existing spectrum available to utilities and other critical infrastructure industries but to allocate sufficient additional spectrum so that these other national policies on energy reliability and independence – which are fundamental to the well-being and security of our nation – can be implemented.

## **II. THE COMMISSION MUST PRESERVE AND MAINTAIN SCARCE UTILITY AND CRITICAL INFRASTRUCTURE INDUSTRY SPECTRUM**

As discussed below, utilities and other critical infrastructure industry (CII)<sup>7</sup> entities rely heavily on wireless communications, yet are experiencing severe spectrum constraints that present significant obstacles to their ability to deploy and maintain even the most basic communications services necessary for their critical infrastructure operations. PacifiCorp and MEC therefore strongly urge the Commission to ensure that any actions or recommendations regarding spectrum that it may adopt as part of its national broadband plan do not in any way further diminish the amount of already scarce spectrum currently available to utilities and other critical infrastructure industries.

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<sup>6</sup> / Linda K. Moore, *Spectrum Policy in the Age of Broadband: Issues for Congress*, CRS Report for Congress at 7 – 8 (2009) (emphasis added).

<sup>7</sup> / See 47 C.F.R. § 90.7 (2008) (definition of “Critical Infrastructure Industry”).

### **A. Wireless Communications are Essential to Utility Operations**

As utility and other commenters have stated in this proceeding, utilities rely on a number of different wireless applications and services to ensure the safe, reliable, and efficient delivery of electric power and other essential services to the public.<sup>8</sup> For example, the National Rural Electric Cooperative Association (NRECA) stated that electric cooperatives’ “number one priority is to keep the lights on, safely and reliably, an impossibility without robust and reliable communications systems they can count on.”<sup>9</sup> Similarly, the American Petroleum Institute (API) stated, “The continued operation of reliable and efficient communications systems by petroleum and natural gas companies is absolutely essential to protecting lives, health and property, both in connection with day-to-day operations of these companies, as well as during responses to emergency incidents. These systems are integral to the production and delivery of our nation’s energy resources to the public, as well as its economic well being.”<sup>10</sup>

Electric utilities such as PacifiCorp and MEC must also comply with reliability standards adopted and enforced by the Federal Energy Regulatory Commission (FERC) and the North American Electric Reliability Corporation (NERC). In order to comply with these standards, utilities must have reliable, secure communications systems, including wireless communications systems that enable essential monitoring and control functions across all levels of the utility’s grid. However, as other commenters have noted, utilities already face significant spectrum constraints even as their need for spectrum is rapidly increasing.<sup>11</sup>

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<sup>8</sup> / See, e.g., Comments of the Utilities Telecom Council and the Edison Electric Institute (UTC/EEI) at 8; Comments of Southern at 5 – 6; Comments of the American Petroleum Institute (API) at 3 – 4.

<sup>9</sup> / Comments of the National Rural Electric Cooperative Association (NRECA) at 13.

<sup>10</sup> / Comments of API at 3.

<sup>11</sup> / Comments of UTC/EEI at 7 – 8; Comments of API at 5; Comments of Southern at 7.

**B. Existing Utility Spectrum is Scarce, and Few Spectrum Options are Available**

The spectrum bands currently relied on for critical utility operations are already congested and scarce, and the narrow bandwidths and operational rules for many of these bands render them inadequate for current and future utility sector needs. As UTC/EEI, Motorola, and the Enterprise Wireless Alliance (EWA) have all pointed out, only about 30 MHz of spectrum is available to support internal communications systems operated not only by utilities and other critical infrastructure industries, but by all business and enterprise users. As EWA stated:

This [30 MHz of spectrum] includes 6.95 MHz in the VHF band, 11.85 MHz in the UHF band, 6 MHz in the 800 MHz band and 5 MHz in the 900 MHz band ... In most metropolitan areas these bands are fully occupied and at VHF and UHF multiple licensees often utilize the same channel in the same or overlapping geographic areas on a coordinated basis.<sup>12</sup>

Moreover, none of these allocations provide adequate bandwidth or channel sizes for the broadband applications that utilities require to support their critical operations – and these channels are in fact being narrowed even further. The Commission’s Part 90 narrowbanding mandate has also imposed a significant obligation on utilities to replace their existing wide-area private land mobile radio systems with little commensurate benefit to the utilities themselves.<sup>13</sup>

Specifically, while narrowbanding is intended to increase the number of channels available to other Part 90 licensees, it does not necessarily increase the number of channels available to the licensees who must narrowband their existing systems. The burdens of narrowbanding while still maintaining sufficient communications capacity are compounded by the fact that Part 90 frequencies in the VHF and UHF bands are only available for shared use

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<sup>12</sup> / Comments of the Enterprise Wireless Alliance (EWA) at 3.

<sup>13</sup> / *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies*, WT Docket No. 99-87, RM-9332, Second Report and Order and Second Further Notice of Proposed Rule Making and Order, 18 FCC Rcd 3034 (2003) (subsequent history omitted).

with other licensees and cannot be used for advanced technologies such as trunking unless the applicant is able to “clear” the channel of other co-channel users operating in the same general area.<sup>14</sup> This is an expensive and time-consuming process with no guarantee of success, and is very problematic for utilities, which generally have extremely large service areas requiring nearly ubiquitous comprehensive coverage.

As a result, PacifiCorp and MEC have each been engaged in extensive and costly multi-year efforts to acquire sufficient spectrum to allow them to meet the Commission’s narrowbanding mandate while retaining a sufficient level of spectrum exclusivity to allow the deployment of advanced technologies that cannot be supported on shared Part 90 channels. However, there are few options available to utilities to secure dedicated spectrum for the wide area coverage they need.

While channels in the 800 MHz and 900 MHz bands can be used on an exclusive basis, these bands are heavily licensed in all areas of the country. In addition, coverage limitations for the 800 MHz and 900 MHz bands mean that these bands are not viable for many areas, such as the mountainous terrain that makes up a significant portion of PacifiCorp’s service territory. Thus, utilities are left effectively trying to cobble together a sufficient number of channels through (i) site-based licensing under Part 90 and attempting to clear channels so that they can be trunked; (ii) acquiring spectrum from other licensees (generally, commercial service providers) in the secondary marketplace; or (iii) a combination of these approaches.

Commercial services are also not a viable option for utility communications needs, since commercial networks are generally not designed or built to provide the levels of reliability, survivability, availability, and coverage that are necessary to meet utility communications needs,

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<sup>14</sup> / 47 C.F.R. § 90.187(b) (2008).

particularly during times of emergency.<sup>15</sup> As UTC/EEI stated in its comments, public communications networks become overloaded and can be unavailable during and in the aftermath of emergencies and natural disasters.<sup>16</sup> With respect to coverage, the Grant County (Washington) Sheriff’s Office observed that “[p]ublic safety agencies and operators of critical infrastructure will have locations where they need wireless connectivity or additional bandwidth that commercial carriers cannot financially justify,”<sup>17</sup> especially in remote areas and challenging environments.

For reasons of operational reliability and system security, it is also essential for utilities to maintain direct control over their communications systems. As UTC/EEI correctly noted, utilities “cannot afford to hand over the liability for their communications reliability to a third party,” since the utility is still held liable before regulators and the public for any problems resulting from the failure of the third party’s network to “perform as needed (regardless of any service level agreement).”<sup>18</sup>

Utilities also generally cannot compete in spectrum auctions for necessary land mobile spectrum. Auctions are typically geared towards commercial service providers who require large amounts of bandwidth and who are able to deploy very dense radio networks because the potential for service revenue supports these deployments and allows the commercial provider to recover the costs paid at auction. Utility radio networks, on the other hand, are not a profit center, but a tool that utilities need to safely and efficiently provide critical utility service to the public. Thus, as UTC/EEI noted, utilities cannot offset the costs of acquiring spectrum at auction

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<sup>15</sup> / Comments of Southern at 14; Comments of UTC/EEI at 8; Comments of API at 5.

<sup>16</sup> / Comments of UTC/EEI at 8.

<sup>17</sup> / Comments of the Grant County Sheriff’s Office at 2.

<sup>18</sup> / Comments of UTC/EEI at 8 – 9, note 12.

through the recovery of commercial network service revenues,<sup>19</sup> nor can they look to such commercial revenues to fund their network construction. In addition, utility systems have to be designed to be both efficient and robust and must generally provide coverage based on the geographic area covered by the utility's grid and the location of key assets, such as generating plants, which are often located in extremely rural areas. However, these requirements are practically in opposition to the service and build-out requirements now attached to most auctioned spectrum, which generally measure compliance with coverage requirements on the basis of population percentages rather than on the geographic area or critical assets covered.

Spectrum auctions are also held only infrequently and do not necessarily correspond with utilities' need to engage in long-range planning or to secure state regulatory approval for such significant capital investments. In fact, as UTC/EEI stated, it is "virtually impossible to conceive that a state regulator would approve a large, yet unknown amount of capital expense so that a utility could compete against commercial operators [at auction] for spectrum, with no guarantee of success and large additional outlay needed for system build-out."<sup>20</sup> Moreover, the geographic areas covered by licenses at auction seldom, if ever, correspond with a utility's service area, thus forcing a utility to either overpay for more spectrum than it needs or to risk acquiring too little spectrum and being left with coverage gaps.<sup>21</sup>

Finally, even when utilities are able to find suitable spectrum in other radio services, they must go through a waiver process with the Commission in order to be able to use the spectrum in

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<sup>19</sup> / See Comments of UTC/EEI at 9.

<sup>20</sup> / Comments of UTC/EEI at 9.

<sup>21</sup> / See *id.* at 10.

private land mobile radio systems, thus adding even more time, cost, complexity, and uncertainty to the licensing process.<sup>22</sup>

**C. The Commission Must Not Further Diminish the Amount or Quality of Already Scarce Spectrum Upon Which Utilities Depend**

As demonstrated above, utilities are experiencing severe spectrum constraints that present significant obstacles to their ability to deploy and maintain even the most basic communications services necessary for their critical infrastructure operations. PacifiCorp and MEC are deeply concerned that the pressures now mounting to identify and reallocate additional spectrum for commercial wireless broadband services will result in an even further diminution and degradation in the amount and quality of dedicated spectrum available to utilities to support the critical energy, utility, and other vital services upon which the American public and the American economy depend.

In its *NOI*, the Commission requested comment on whether it should conduct a “spectrum inventory” to identify additional bands that may be suitable for wireless broadband.<sup>23</sup> PacifiCorp and MEC agree that a spectrum inventory could be a valuable tool in improving the nation’s spectrum policies. However, PacifiCorp and MEC also agree that any spectrum inventory must

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<sup>22</sup> / For example, it took PacifiCorp *four years* to secure necessary rule waivers to acquire and deploy VHF Public Coast spectrum in its private land mobile radio system. *See PacifiCorp Amended Request for Waiver to Permit Use of Maritime VHF Public Coast Frequencies for Private Land Mobile Radio Communications*, File Nos. 0001988156, 0001988415, Order, DA 09-1120 (rel. May 21, 2009). In this Order, the Commission reaffirmed its previous determination that “grant of the assignment applications and waiver request would serve the public interest by providing support for PacifiCorp’s electric utility operations to help meet public safety needs and operate critical infrastructure.” *Id.* ¶ 7 (internal citation omitted). However, the public interest is hardly served where providers of essential public services are compelled to go through such an expensive and time-consuming process to secure the spectrum assets they require to meet their public safety needs and operate critical infrastructure.

<sup>23</sup> / *NOI* at ¶ 44.

take into account the current and future needs of all spectrum users and all applications, not just the “needs” of wireless broadband.<sup>24</sup>

In particular, the Commission should not overlook the essential role of non-commercial wireless services, which fulfill vital public safety, public service, and critical infrastructure needs. Therefore, PacifiCorp and MEC join with Southern in urging the Commission to exclude from its broadband analysis those bands that are currently used to support critical utility operations, and to expand the purpose of its inventory to identify bands that may be suitable for the private internal wireless applications that utilities will need to meet increasing demands on the safety, reliability, and efficiency of their critical infrastructure operations.<sup>25</sup>

Although the comments in this proceeding demonstrate broad support for the Commission’s spectrum inventory proposal, many of the commenters calling for a spectrum inventory are concerned solely with identifying and reallocating spectrum for *commercial* wireless broadband. These commenters look only at commercial needs and opportunities and ignore completely the pressing needs of other spectrum users that fulfill important public interest needs, such as utilities and other critical infrastructure entities.

For example, T-Mobile and the Consumer Electronics Association argue that the results of any spectrum inventory should be used to allocate and auction an additional 200 MHz of spectrum below 3.5 GHz for commercial mobile broadband use, including 100 MHz of non-government spectrum.<sup>26</sup> However, a report submitted to Congress on June 29, 2009 by the Congressional Research Service stated:

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<sup>24</sup> / See Comments of Southern at 7.

<sup>25</sup> / *Id.* at 7 and 9.

<sup>26</sup> / Comments of T-Mobile at 17; Comments of the Consumer Electronics Association at 7 – 8.

Auctioning spectrum licenses may direct assets to end-use customers instead of providing wireless services where the consumer may be the beneficiary but not the customer. The role of wireless communications to support a smart grid has been briefly noted in this report. Spectrum resources are also needed for railroad safety, for water conservation, for the safe maintenance of critical infrastructure industries, and for many applications that may not have an immediate commercial value but can provide long-lasting value to society as a whole.<sup>27</sup>

As it develops its recommendations for the national broadband plan, the Commission should therefore look beyond auctions and “commercial value” to consider the “long-lasting value to society as a whole” of dedicated spectrum allocations for utilities and other critical infrastructure industries.

The Commission must also resist calls to use the results of the spectrum inventory to open up various bands to shared use on an “opportunistic” or “dynamic” basis using cognitive radios and similar “dynamic” technologies or protocols.<sup>28</sup> As Ericsson stated, “the Commission must be cautious about allowing secondary use of licensed spectrum,” since technologies that enable secondary use, such as cognitive radios, “can create issues for the primary users of the spectrum they are trying to share.”<sup>29</sup>

Because many of these new and proposed technologies have not yet been proven under real-world operating conditions, there is a significant risk that their use could compromise the viability of existing services, including critical utility communications. Therefore, bands used by utilities should not be considered for shared or “opportunistic” use, whether on a secondary basis or otherwise.

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<sup>27</sup> / Linda K. Moore, *Spectrum Policy in the Age of Broadband: Issues for Congress*, CRS Report for Congress at 13 (2009).

<sup>28</sup> / Comments of the New America Foundation; *See also* Comments of Microsoft at 9; Comments of Dell at 12.

<sup>29</sup> / Comments of Ericsson at 18 – 19.

### **III. THE COMMISSION SHOULD MAKE ADDITIONAL SPECTRUM AVAILABLE FOR UTILITIES AND CRITICAL INFRASTRUCTURE INDUSTRIES**

As the Commission looks to ways to improve access to spectrum for wireless broadband, PacifiCorp and MEC join with UTC/EEI, Southern, NRECA, API, EWA, and Motorola in urging the Commission to make additional spectrum available for utilities and other critical infrastructure industries, particularly in light of the new demands being placed on them by many of the same policies and mandates that are driving the efforts to expand broadband deployment.<sup>30</sup>

For too long, utilities have “fallen through the cracks” between public safety services, which have access to ample amounts of high-quality exclusive-use spectrum, and commercial services, which have also been given access to large amounts of bandwidth on which to develop revenue-producing systems.

Although utilities are commercial enterprises, they do not make money from their use of spectrum. Rather, utilities are more akin to public safety, in that they provide essential services to the public – such as electricity, gas, and water – and use spectrum to facilitate the provision of these essential services. Utilities also are often among the first called on in times of emergency – whether to shut off gas or power to prevent an explosion during a fire, secure downed “live” wires following an accident, or to restore critical electric power following storms or other natural or man-made disasters – and their response must generally be coordinated with public safety agencies on the scene. However, utilities have been consistently denied access to public safety spectrum, even though utilities have been deemed part of the nation’s critical infrastructure and are defined as “public safety radio services” in the Communications Act.<sup>31</sup>

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<sup>30</sup> / Comments of UTC/EEI at 7 – 11; Comments of Southern at 13; Comments of NRECA at 11 – 13; Comments of API at 4 – 7; Comments of EWA; Comments of Motorola at 8 – 9.

<sup>31</sup> / See 47 U.S.C. § 309(j)(2)(A); See also *Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended*, WT Docket No. 99-87, First Report and Order, 15

As discussed above, there is already insufficient dedicated spectrum available to support critical utility operations, even as the demands on utility communications systems continue to increase. Utilities also require access to additional spectrum in order to deploy new Smart Grid technologies. As the Congressional Research Service stated in its recent report to Congress, “[A]n efficient Smart Grid requires spectrum capacity to support the broadband communications infrastructure required to operate the grid. A Smart Grid policy that presumes the availability of suitable spectrum for wireless connections could fall short of its intended goal unless spectrum policy is aligned.”<sup>32</sup>

Similarly, a report released in June 2009 by the National Institute of Standards and Technology (NIST) concluded that, despite the key role of communications in enabling the “mission-critical capabilities” that Smart Grid systems provide, “wireless Smart Grid device manufacturers and system integrators struggle with communication interference issues with other devices in unlicensed radio spectrums ... At the workshops, a recurring theme emerged desiring licensed spectrum for Smart Grid communications.”<sup>33</sup> Commenting on the broadband communications needs of utilities, CII, and enterprise users, Motorola stated, “[C]ritical

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FCC Rcd 22709, 22746-48 ¶¶ 76 – 80 (2000). In this Order, the Commission held that a radio service not allocated for “traditional” public safety uses will be deemed a “public safety radio service” if the service is used “by entities that (1) have an infrastructure that they use primarily for the purpose of providing essential public services to the public at large; and (2) need, as part of their regular mission, reliable and available communications in order to prevent or respond to disaster or crisis affecting the public at large.” *Id.* ¶ 77. The Commission specifically cited electric utilities as an example of the type of entity that meets these requirements. *Id.* ¶ 78.

<sup>32</sup> / Linda K. Moore, *Spectrum Policy in the Age of Broadband: Issues for Congress*, CRS Report for Congress at 7 – 8 (2009).

<sup>33</sup> / Electric Power Research Institute, Report to NIST on the Smart Grid Interoperability Standards Roadmap, June 17, 2009 at 94 (<http://www.nist.gov/smartgrid/InterimSmartGridRoadmapNISTRestructure.pdf> (last accessed July 20, 2009)).

infrastructure entities will be relegated to internal communications systems that provide only voice and low speed data unless the Commission acts to provide additional spectrum.”<sup>34</sup>

Despite the pressing need for sufficient spectrum to support the safe, reliable, and efficient provision of critical energy and utility services – which Congress and the Administration have repeatedly declared to be an important and vital national interest – there has been no allocation of non-public safety spectrum for *any* private wireless services in nearly 25 years, and the amount of dedicated spectrum available for utility and CII use has actually *declined* over the past decade as the Commission has opened up and/or reallocated various bands to commercial and non-CII users.<sup>35</sup>

Therefore, the Commission should consider as part of this proceeding a plan to make additional spectrum available to utilities and other critical infrastructure industry users. In so doing, the Commission would also satisfy Congress’ requirement that the national broadband plan include plans to advance policy goals such as energy independence and efficiency, public safety and homeland security, and overall consumer welfare.<sup>36</sup>

In particular, PacifiCorp and MEC urge the Commission to make licensed spectrum available to utilities in the bands below 2 GHz. Utility communications systems must be capable of covering the entire grid regardless of terrain or population, and must be able to do so with the highest degree of reliability possible regardless of conditions. This can only be accomplished through the use of frequencies in the lower spectrum bands.<sup>37</sup>

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<sup>34</sup> / Comments of Motorola at 9.

<sup>35</sup> / See Comments of Southern at 15; Comments of EWA at 3; Comments of API at 5 – 6.

<sup>36</sup> / Recovery Act § 6001(k)(2)(D).

<sup>37</sup> / See, e.g., Comments of Motorola at 36 (“[T]he large geographies that electric grids encompass make it desirable to use lower frequency spectrum (*i.e.*, below 2 GHz) to take advantage of more favorable propagation characteristics.”).

One proposal that the Commission should take into consideration is the recommendation by UTC/EEI that the 1800-1830 MHz band be made available for utility and CII operations.<sup>38</sup> As UTC/EEI and others have noted, this band has already been allocated in Canada to support the operations, maintenance and management of the electric supply, and harmonizing the use of this band with Canada – which shares an electric grid with the United States – would promote the efficient use of this spectrum, promote the deployment of Smart Grid and other broadband technologies, facilitate interoperability, improve the overall reliability and efficiency of the North American power grid, and serve the vast needs of growing systems and increasing wireless data loads.<sup>39</sup>

Another proposal the Commission should consider is Southern's recommendation that the Commission consider changes to its rules that would promote public/private partnerships between public safety and utilities for the development, deployment, and operation of infrastructure and services in the 700 MHz and 4.9 GHz bands. Such partnerships would help overcome the funding obstacles faced by many public safety agencies and would serve the communications needs of both public safety and critical infrastructure industries.<sup>40</sup>

#### **IV. CONCLUSION**

When viewed holistically and in the context of strong federal mandates for the efficient and reliable delivery of energy, the Commission's national broadband plan must include consideration of the needs of electric utilities to not only maintain the existing spectrum resources they are using now, but to also consider how sufficient additional spectrum can be dedicated to utility use for the critical internal communications operations that enable the

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<sup>38</sup> / Comments of UTC/EEI at 10 – 11.

<sup>39</sup> / *See id.*; Comments of NRECA at 12, note 31.

<sup>40</sup> / Comments of Southern at 15 – 16.

provision of essential energy, utility, and other vital services upon which the American public and the American economy depend.

**WHEREFORE, THE PREMISES CONSIDERED,** PacifiCorp and MidAmerican Energy Company respectfully requests the Commission to take action in this docket consistent with the views expressed herein.

Respectfully submitted,

**PACIFICORP AND MIDAMERICAN  
ENERGY COMPANY**

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